

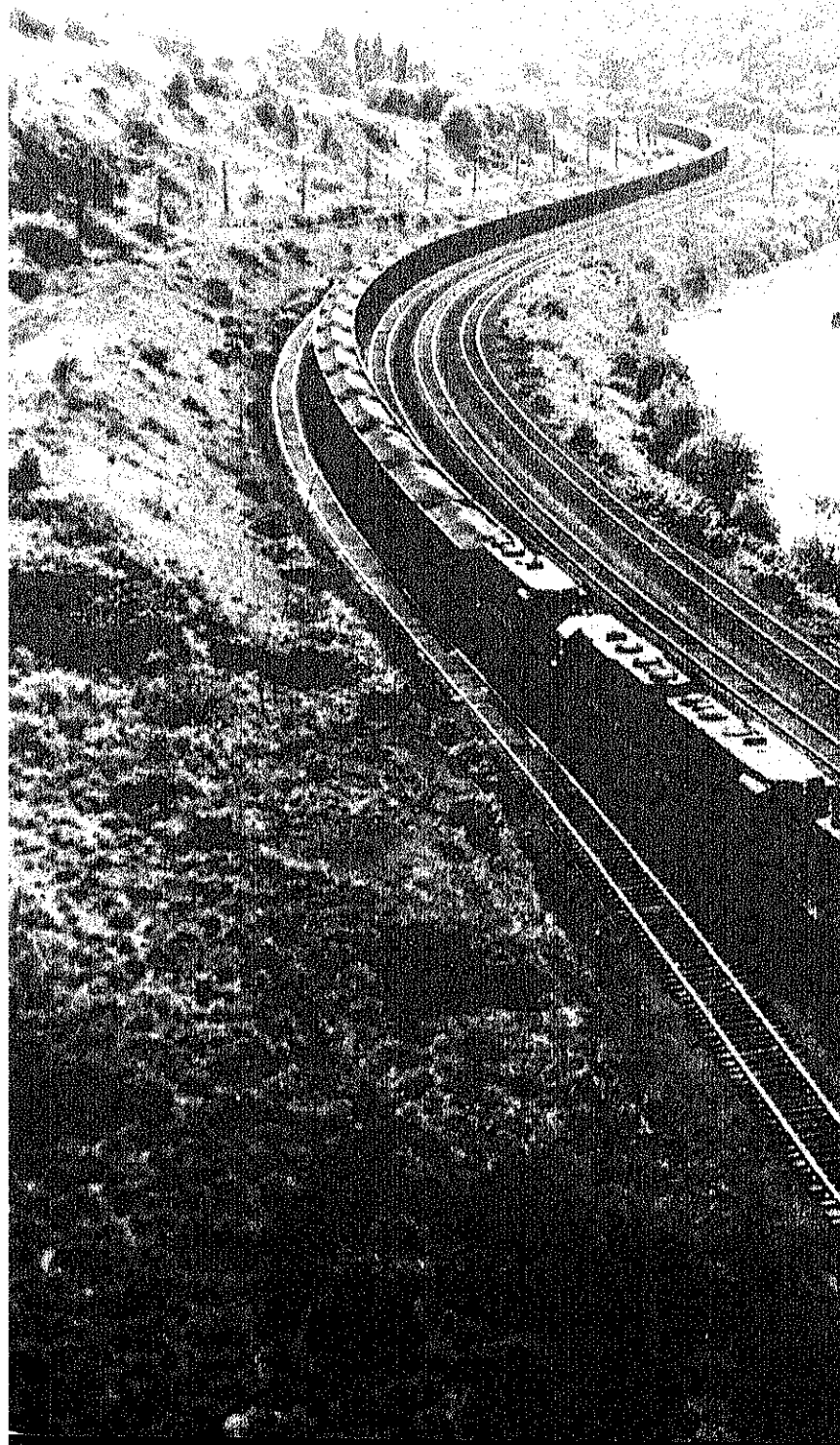


Energy
Information
Administration

Weekly Coal Production

Production for Week Ended:
January 19, 1991

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Preface

The *Weekly Coal Production (WCP)* provides weekly estimates of U.S. coal production by State. Supplementary data are usually published monthly in two supplements: the Coal Exports and Imports Supplement and the Domestic Market Supplement. This week's Coal Exports and Imports Supplement contains detailed monthly data on U.S. coal and coke exports and imports. The Domestic Market Supplement contains detailed monthly electric utility coal statistics, by Census Division and State, for generation, consumption, stocks, receipts, sulfur content, prices, and the origin and destination of coal shipments. This supplement also contains summary-level, monthly data for all coal-consuming sectors on a quarterly basis.

Preliminary coal production data are published quarterly, based on production data collected using Form EIA-6, "Coal Distribution Report." Based on 1988 and 1989 data, the coal production estimation error for a quarter at the national level (i.e., the difference between the sum of the weekly estimates for a quarter and the quarterly EIA-6 preliminary data) ranges from 1 percent to 4 percent for 1988 and 1 percent to 2 percent for 1989.

Final coal production data are published annually, based on the EIA-7A coal production survey. Based

on 1988 and 1989 data, the revision error for a quarter at the national level (i.e., the difference between the EIA-6 preliminary data and the EIA-7A final data) ranges from 0.02 percent to 0.08 percent for 1988 and 0.9 percent to 0.14 percent for 1989.

This publication is prepared by the Coal Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration (EIA) to fulfill its data collection and dissemination responsibilities as specified in the Federal Energy Administration Act of 1974 (P.L. 93-275) as amended. *Weekly Coal Production* is intended for use by industry, press, State and local governments, and consumers. Other publications that may be of interest are the quarterly *Coal Distribution*, the *Quarterly Coal Report*, *Coal Production 1989*, and *Coal Data: A Reference*.

This publication was prepared by Wayne M. Watson and Michelle D. Bowles under the direction of Mary K. Paull and Noel C. Balthasar, Chief, Data Systems Branch. Specific information about the *State Coal Profile: North Dakota* may be obtained from Eugene R. Slatick at 202/254-5384 or Mary L. Lilly at 202/254-5391. Questions on energy statistics should be directed to the National Energy Information Center (NEIC) at 202/586-8800.

Photo Credit:

Dakota Gasification Company
State Coal Profile

Distribution Category UC-98

Released for printing January 25, 1991

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Summary

U.S. coal production in the week ended January 19, 1991, as estimated by the Energy Information Administration, totaled 20 million short tons. This was 7 percent higher than in the previous week, and slightly lower than in the comparable week in 1990. Production east of the Mississippi River totaled 12 million short tons, and production west of the Mississippi River totaled 8 million short tons.

U.S. coal exports in November 1990 amounted to 10 million short tons, bringing the total for the first 11 months of 1990 to 98 million short tons. This was 5 million short tons more than in the comparable period of 1989, due chiefly to a 15-percent gain in shipments to Europe. Total coal exports were valued at \$4 billion, based on an average price of \$42.54 per short ton, virtually the same as a year earlier. About one-half of the coal was exported from the Norfolk, Virginia, Customs District, which handled 11 percent more export coal than in the previous year.

Steam coal exports from January through November 1990 totaled 39 million short tons, a rise of 21 percent over the amount in the same period in 1989. Exports to Canada, the principal destination, rose by 10 percent to 10 million short tons. Factors contributing to the increase were a stock build-up by Ontario Hydro in anticipation of higher coal-fired generation, partly to offset maintenance-related outages at its nuclear power plants, and purchases of low-sulfur

coal from the western United States for test burns. Steam coal exports to Europe totaled 20 million short tons, 31 percent higher than in the corresponding period of 1989. The largest tonnage increases were to the Netherlands and Belgium-Luxembourg. Steam coal exports to Taiwan, the leading Asian destination, were up by 16 percent.

Metallurgical coal exports in the first 11 months of 1990 amounted to 59 million short tons, slightly below the comparable 1989 level. Japan was the principal destination, but the 10 million short tons it imported was 6 percent less than in the same period of 1989, reflecting the displacement of U.S. coal in the Japanese steel industry by Australian and Canadian coal. Metallurgical coal exports to Canada fell by nearly one-third to 4 million short tons, the result of a slowdown in the Canadian steel industry. By contrast, exports to Europe rose by 7 percent to 34 million short tons, with the Netherlands, Turkey, and Italy accounting for the largest increases.

U.S. coal imports for the first 11 months of 1990 totaled 2.4 million short tons, 5 percent below the level a year earlier. Colombia accounted for about one-half of the total, with Canada supplying most of the balance. Total coal imports during the period were valued at \$84 million, based on an average price of \$34.57 per short ton.

Figure 1. Coal Production

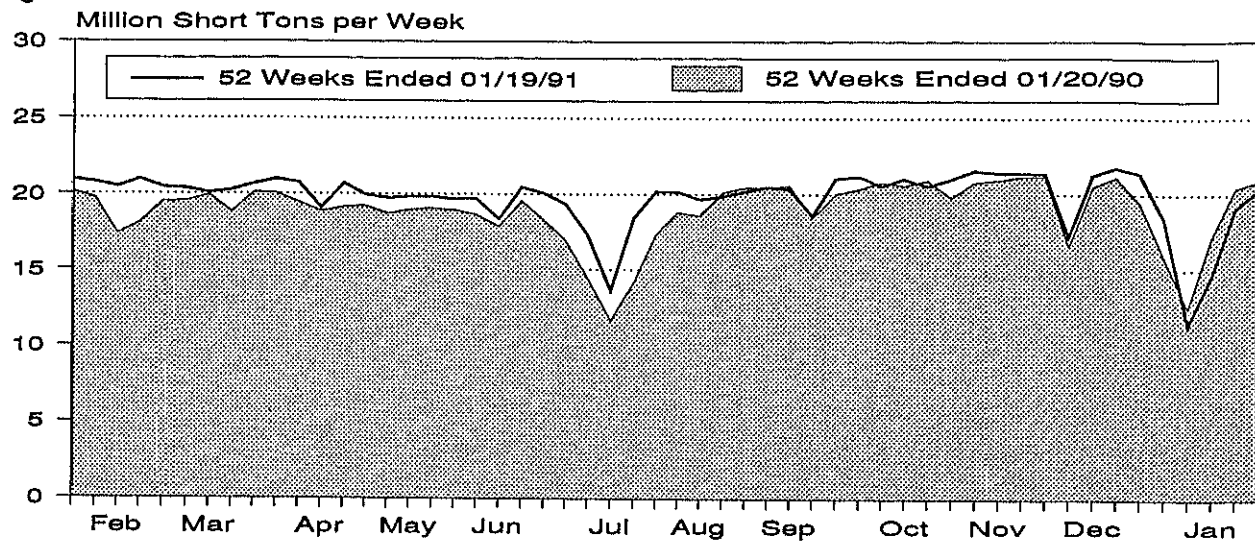


Table 1. Coal Production

	Week Ended			52 Weeks Ended		
Production and Carloadings	01/19/91	01/12/91	01/20/90	01/19/91	01/20/90	Percent Change
Production (Thousand Short Tons)						
Bituminous ¹ and Lignite	20,360	19,008	20,884	1,025,444	979,693	4.7
Pennsylvania Anthracite	53	46	51	3,105	3,297	-5.8
U.S. Total	20,413	19,054	20,935	1,028,549	982,989	4.6
Railroad Cars Loaded	129,496	120,927	133,163	6,653,299	6,376,367	

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components due to independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

Table 2. Coal Production by State
(Thousand Short Tons)

Region and State	Week Ended		
	01/19/91	01/12/91	01/20/90
Bituminous Coal¹ and Lignite			
East of the Mississippi	12,027	11,199	13,140
Alabama	591	550	644
Illinois	1,255	1,224	1,297
Indiana	735	686	706
Kentucky	3,160	3,045	3,699
Kentucky, Eastern	2,410	2,292	2,689
Kentucky, Western	749	753	1,010
Maryland	57	56	76
Ohio	696	633	748
Pennsylvania Bituminous	1,226	1,044	1,348
Tennessee	150	127	140
Virginia	923	789	1,099
West Virginia	3,236	3,046	3,383
West of the Mississippi	8,333	7,810	7,744
Alaska	29	27	30
Arizona	207	193	251
Arkansas	1	1	*
Colorado	434	456	396
Iowa	8	7	8
Kansas	23	22	18
Louisiana	50	45	57
Missouri	59	55	55
Montana	755	661	718
New Mexico	510	481	430
North Dakota	622	544	578
Oklahoma	37	37	41
Texas	1,134	1,059	1,083
Utah	478	504	466
Washington	89	83	99
Wyoming	3,898	3,635	3,514
Bituminous¹ and Lignite Total	20,360	19,008	20,884
Pennsylvania Anthracite	53	46	51
U.S. Total	20,413	19,054	20,935

*Less than 500 short tons.

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components due to independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

Table 3. Coal Exports and Imports, 1981-1990
(Thousand Short Tons and Dollars per Short Ton)

Year and Month	Exports						Imports	
	Metallurgical		Steam ¹		Total		Quantity	Average Price
	Quantity	Average Price ²	Quantity	Average Price ²	Quantity	Average Price ²		
1981	65,234	\$57.40	47,307	\$45.92	112,541	\$52.57	1,043	\$28.47
1982	64,585	61.07	41,692	49.11	106,277	56.37	742	30.40
1983	49,964	55.49	27,807	46.18	77,772	52.16	1,271	33.59
1984	56,975	52.41	24,508	46.77	81,483	50.72	1,286	35.37
1985	60,313	50.46	32,367	43.92	92,680	48.18	1,952	36.04
1986	54,977	47.81	30,541	42.60	85,518	45.95	2,212	36.02
1987	51,679	44.49	27,928	39.60	79,607	42.77	1,747	32.04
1988								
January	3,449	43.00	984	37.58	4,434	41.80	159	28.57
February	3,458	42.81	1,024	41.16	4,482	42.43	162	27.41
March	5,119	42.95	2,026	39.44	7,145	41.96	221	30.34
April	5,901	43.67	3,042	40.04	8,943	42.44	107	27.24
May	4,953	44.98	2,952	39.35	7,905	42.88	224	43.49
June	4,980	44.82	3,073	38.92	8,053	42.57	257	27.96
July	5,445	44.73	2,858	37.22	8,303	42.15	203	25.34
August	5,389	44.94	3,933	37.42	9,322	41.77	205	27.13
September	6,518	44.34	3,547	36.74	10,066	41.66	29	34.35
October	5,621	44.06	3,389	39.08	9,010	42.19	229	25.55
November	5,563	44.70	2,775	38.47	8,338	42.63	207	31.80
December	5,555	44.17	3,469	39.39	9,023	42.33	131	32.63
Total	61,950	44.17	33,073	38.59	95,023	42.23	2,134	29.96
1989								
January	4,488	43.92	1,818	36.29	6,306	41.72	66	36.14
February	5,298	44.32	1,450	37.14	6,748	42.78	131	31.89
March	6,163	44.17	2,212	36.98	8,375	42.27	334	33.86
April	6,061	44.08	3,042	38.46	9,104	42.20	158	31.46
May	6,303	45.40	3,381	37.40	9,685	42.61	312	32.19
June	5,598	45.82	4,059	38.14	9,657	42.59	218	39.04
July	3,881	45.77	2,328	37.95	6,209	42.84	375	36.65
August	4,925	46.09	3,197	37.30	8,122	42.63	247	33.85
September	5,754	45.94	3,907	37.31	9,661	42.45	303	33.64
October	5,922	45.50	3,371	37.97	9,293	42.77	160	33.20
November	6,026	45.81	3,743	38.05	9,768	42.84	245	31.54
December	4,710	45.65	3,179	37.66	7,888	42.43	303	35.09
Total	65,128	45.19	35,687	37.64	100,815	42.52	2,851	34.14
1990								
January	4,901	45.72	2,547	37.29	7,447	42.84	175	33.01
February	4,381	45.92	1,862	36.36	6,243	43.07	268	35.91
March	6,254	45.78	2,439	38.36	8,693	43.70	292	35.54
April	4,754	45.95	3,836	38.50	8,590	42.67	182	31.45
May	5,643	46.81	4,184	36.50	9,827	42.42	144	34.08
June	5,699	46.35	3,616	36.35	9,316	42.47	348	34.65
July	5,495	46.82	3,698	35.69	9,194	42.34	200	29.58
August	5,598	46.59	4,467	37.57	10,065	42.59	120	35.72
September	5,567	46.70	4,671	35.89	10,238	41.76	194	32.31
October	4,471	47.06	4,286	36.41	8,756	41.85	284	41.32
November	5,805	46.42	3,816	36.88	9,621	42.63	224	32.86
1990 Year to Date	58,569	46.38	39,422	36.85	97,991	42.54	2,432	34.57
1989 Year to Date	60,419	45.16	32,508	37.64	92,926	42.53	2,548	34.03

¹Includes bituminous, subbituminous, lignite, and anthracite.

²Average price of all coal exports in this category.

Note: Total may not equal sum of components because of independent rounding.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 4. Coal Exports, November 1990
(Short Tons)

Continent and Country of Destination	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	1,690,364	1,846,019	1,601,137	15,055,502	15,495,001	-2.8
Canada ¹	1,647,289	1,811,909	1,583,424	14,714,178	15,330,614	-4.0
Jamaica	18,069	-	16,186	52,196	52,757	-1.1
Mexico	4,713	34,110	328	204,023	62,692	225.4
Other ²	20,293	-	1,199	85,105	48,938	73.9
South America Total	524,580	531,636	864,928	6,151,820	6,874,763	-10.5
Argentina	75,655	-	130,493	577,537	741,589	-22.1
Brazil	448,839	493,441	651,926	5,187,151	5,247,881	-1.2
Chile	-	38,195	76,507	356,427	867,256	-58.9
Other ²	86	-	6,002	30,705	18,037	70.2
Europe Total	4,837,125	4,777,901	4,939,243	54,084,063	47,163,497	14.7
Albania	27,507	34,097	24,813	178,057	119,820	48.6
Belgium & Luxembourg	612,692	536,104	669,002	7,852,604	6,452,909	21.7
Bulgaria	-	-	-	87,955	-	-
Denmark	263,237	400,712	185,556	3,002,382	2,871,354	4.6
Finland	-	-	-	95,259	103,678	-8.1
France	540,766	306,222	671,826	6,549,328	5,922,711	10.6
Greece	-	-	-	579	213,420	-99.7
Ireland	78,398	92,462	223,998	1,259,802	1,155,549	9.0
Italy	654,092	1,294,951	867,401	10,633,360	10,224,850	4.0
Netherlands	1,079,081	725,802	574,633	7,867,642	5,501,599	43.0
Norway	6,140	26,284	18,305	165,594	132,201	25.3
Portugal	240,901	113,227	125,887	1,716,241	1,293,061	32.7
Romania	69,162	62,755	195,525	1,653,608	1,234,803	33.9
Spain	301,422	265,281	399,783	3,351,264	3,089,382	8.5
Sweden	81,907	259,983	83,111	865,718	733,740	18.0
Turkey	283,725	-	284,711	2,117,292	1,531,330	38.3
United Kingdom	419,855	559,772	500,300	4,789,269	4,339,368	10.4
West Germany	348	58,087	34,052	955,199	699,187	36.6
Yugoslavia	167,266	36,607	75,039	893,225	1,479,943	-39.6
Other ²	10,626	5,555	5,301	49,685	64,592	-23.1
Asia Total	2,357,746	1,562,127	2,181,346	20,865,662	21,243,852	-1.8
China (Taiwan)	497,445	195,673	660,686	4,394,669	4,135,930	6.3
Israel	-	-	-	638,996	487,298	31.1
Japan	1,482,419	1,233,022	1,192,549	12,250,265	13,018,302	-5.9
Korea, Republic of	377,776	133,175	328,111	3,436,745	3,534,525	-2.8
Pakistan	-	-	-	-	60,451	-
Other ²	106	257	-	144,987	7,346	NM
Oceania & Australia Total	97	160	-	2,094	483	333.5
Africa Total	211,258	38,640	181,785	1,831,420	2,148,828	-14.8
Algeria	171,752	-	-	479,217	739,818	-35.2
Egypt	-	-	102,150	544,801	585,161	-6.9
Other ²	39,506	38,640	79,635	807,402	823,849	-2.0
Total	9,621,170	8,756,483	9,768,439	97,990,561	92,926,424	5.4

^{NM}Percent change calculation not meaningful as value is greater than 500.

¹Based on the U.S.-Canada Free Trade Agreement, as of January 1990, the U.S. Department of Commerce began reporting statistics on U.S. exports to Canada based on information on imports provided monthly by the Canadian government. For this reason the quantity and value for coal (metallurgical and steam) and the quantity for coke are no longer strictly comparable to the historical U.S. series.

²Includes countries with exports less than or equal to 50,000 short tons in 1989.

Note: Total may not equal sum of components because of independent rounding.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 5. Average Price of Coal Exports, November 1990
(Dollars per Short Ton)

Continent and Country of Destination	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	\$33.20	\$31.14	\$42.25	\$32.79	\$42.27	-22.4
Canada ¹	33.16	30.94	42.39	32.71	42.34	-22.7
Jamaica	30.57	-	30.69	30.57	30.61	-.1
Mexico	40.98	40.89	34.98	37.27	41.84	-10.9
Other ²	36.37	-	35.48	36.42	35.78	1.8
South America Total	47.36	46.49	44.50	46.11	43.89	5.1
Argentina	45.92	-	44.30	45.59	44.54	2.4
Brazil	47.61	47.26	46.25	46.81	45.64	2.6
Chile	-	36.60	29.95	36.87	30.94	19.2
Other ²	34.33	-	-	35.86	39.61	-9.5
Europe Total	44.59	43.73	42.47	43.85	42.43	3.3
Albania	-	-	44.91	48.38	43.93	10.1
Belgium & Luxembourg	44.43	45.32	42.15	44.89	43.36	3.5
Bulgaria	-	-	-	49.24	-	-
Denmark	33.82	34.67	32.68	34.47	33.04	4.3
Finland	-	-	-	44.72	42.45	5.4
France	47.12	44.50	39.13	42.79	41.38	3.4
Greece	-	-	-	39.99	36.29	10.2
Ireland	48.39	36.29	37.60	38.91	37.73	3.1
Italy	46.70	44.72	41.57	44.77	43.50	2.9
Netherlands	42.96	43.65	43.06	42.90	40.73	5.3
Norway	-	-	-	-	39.88	-
Portugal	40.33	39.41	41.30	40.84	40.67	.4
Romania	44.45	-	49.01	47.59	45.81	3.9
Spain	43.65	45.36	45.18	46.11	45.90	.4
Sweden	48.15	48.22	47.12	48.20	44.84	7.5
Turkey	47.84	-	43.75	46.13	43.37	6.4
United Kingdom	48.06	46.51	47.55	47.30	45.53	3.9
West Germany	40.80	38.97	39.98	40.64	42.33	-4.0
Yugoslavia	46.98	44.32	44.41	46.09	44.28	4.1
Other ²	39.92	40.91	-	39.95	42.88	-6.8
Asia Total	43.11	44.19	42.66	43.17	42.15	2.4
China (Taiwan)	40.40	42.18	39.53	38.59	37.51	2.9
Israel	-	-	-	39.42	39.17	.6
Japan	43.09	44.68	43.17	44.20	42.98	2.9
Korea, Republic of	46.75	42.60	47.12	46.24	44.94	2.9
Other ²	40.86	37.79	-	38.91	37.27	4.4
Oceania & Australia Total	40.97	40.00	-	36.60	34.98	4.7
Africa Total	45.09	35.93	38.61	39.33	40.14	-2.0
Algeria	48.57	-	-	47.67	46.02	3.6
Egypt	-	-	45.37	45.81	45.59	.5
Other ²	29.94	35.93	29.94	31.34	30.98	1.2
Total	42.68	41.32	42.59	42.11	42.39	-.7
U.S. Total³	42.63	41.85	42.84	42.54	42.53	*

*Rounded to zero.

¹Based on the U.S.-Canada Free Trade Agreement, as of January 1990, the U.S. Department of Commerce began reporting statistics on U.S. exports to Canada based on information on imports provided monthly by the Canadian government. For this reason the quantity and value for coal (metallurgical and steam) and the quantity for coke are no longer strictly comparable to the historical U.S. series.

²Includes countries with exports less than or equal to 50,000 short tons in 1989.

³Average price of all coal exports in this category.

Note: Total may not equal sum of components because of independent rounding. Average price is based on the free alongside ship (f.a.s.) value. The average prices presented in this table are considered to be representative prices for coal exports and fall within the range of \$28 to \$50 inclusively.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 6. Steam Coal Exports, November 1990
(Short Tons)

Continent and Country of Destination	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	1,202,512	1,534,271	1,005,501	10,795,380	9,194,177	17.4
Canada ¹	1,159,437	1,500,161	987,788	10,454,271	9,048,666	15.5
Jamaica	18,069	-	16,186	52,196	52,757	-1.1
Mexico	4,713	34,110	328	204,023	62,692	225.4
Other ²	20,293	-	1,199	84,890	30,062	182.4
South America Total	86	38,195	82,509	426,779	862,633	-50.5
Argentina	-	-	-	-	337	-
Brazil	-	-	-	94,281	5,727	NM
Chile	-	38,195	76,507	301,793	838,532	-64.0
Other ²	86	-	6,002	30,705	18,037	70.2
Europe Total	1,767,096	2,168,251	1,820,568	19,998,739	15,228,217	31.3
Belgium & Luxembourg	253,398	52,250	225,564	2,282,268	967,584	135.9
Bulgaria	-	-	-	39,065	-	-
Denmark	263,237	400,712	185,556	2,946,810	2,743,018	7.4
Finland	-	-	-	-	1,555	-
France	-	77,947	90,833	1,917,645	1,445,514	32.7
Greece	-	-	-	579	213,420	-99.7
Ireland	78,398	92,462	223,998	1,259,802	986,325	27.7
Italy	128,584	680,426	685,133	4,158,239	4,305,918	-3.4
Netherlands	629,032	463,218	181,946	4,161,629	2,540,280	63.8
Norway	6,140	6,830	9,727	67,811	48,530	39.7
Portugal	240,901	113,227	125,887	1,458,595	940,262	55.1
Romania	-	-	-	-	3,293	-
Spain	67,096	17,006	65,678	312,162	200,602	55.6
Sweden	-	-	-	23,150	204,028	-88.7
Turkey	-	-	-	16,643	203	NM
United Kingdom	89,336	209,100	20,525	958,300	321,330	198.2
West Germany	348	49,518	420	356,165	227,424	56.6
Yugoslavia	-	-	-	12,995	32,670	-60.2
Other ²	10,626	5,555	5,301	26,881	46,261	-41.9
Asia Total	807,011	506,138	754,299	7,446,035	6,426,944	15.9
China (Taiwan)	497,445	123,507	487,705	4,001,133	3,441,999	16.2
Israel	-	-	-	584,208	338,481	72.6
Japan	227,821	297,692	266,594	2,015,552	2,109,652	-4.5
Korea, Republic of	81,639	84,682	-	722,892	529,466	36.5
Other ²	106	257	-	122,250	7,346	NM
Oceania & Australia Total	97	160	-	2,094	483	333.5
Africa Total	39,506	38,640	79,635	752,676	795,459	-5.4
Egypt	-	-	-	430	-	-
Other ²	39,506	38,640	79,635	752,246	795,459	-5.4
Total	3,816,308	4,285,655	3,742,512	39,421,703	32,507,913	21.3

^{NM}Percent change calculation not meaningful as value is greater than 500.

¹Based on the U.S.-Canada Free Trade Agreement, as of January 1990, the U.S. Department of Commerce began reporting statistics on U.S. exports to Canada based on information on imports provided monthly by the Canadian government. For this reason the quantity and value for coal (metallurgical and steam) and the quantity for coke are no longer strictly comparable to the historical U.S. series.

²Includes countries with exports less than or equal to 50,000 short tons in 1989.

Note: Total may not equal sum of components because of independent rounding. Steam coal includes bituminous, subbituminous, lignite, and anthracite.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 7. Average Price of Steam Coal Exports, November 1990
(Dollars per Short Ton)

Continent and Country of Destination	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	\$29.50	\$29.79	\$39.16	\$30.57	\$39.46	-22.5
Canada ¹	29.25	29.52	39.33	30.38	39.52	-23.1
Jamaica	30.57	-	30.69	30.57	30.61	-.1
Mexico	40.98	40.89	34.98	37.27	41.84	-10.9
Other ²	36.37	-	35.48	36.39	35.39	2.8
South America Total	34.33	36.60	29.95	37.17	30.26	22.8
Argentina	-	-	-	-	34.99	-
Brazil	-	-	-	42.44	-	-
Chile	-	36.60	29.95	35.83	30.22	18.6
Other ²	34.33	-	-	35.86	39.61	-9.5
Europe Total	38.89	39.60	37.14	38.51	36.71	4.9
Belgium & Luxembourg	38.81	35.68	34.78	37.75	33.65	12.2
Bulgaria	-	-	-	48.99	-	-
Denmark	33.82	34.67	32.68	34.47	32.94	4.6
Finland	-	-	-	-	45.02	-
France	-	34.48	35.55	37.07	34.87	6.3
Greece	-	-	-	39.99	36.29	10.2
Ireland	48.39	36.29	37.60	38.91	38.01	2.4
Italy	40.42	41.49	39.57	40.67	39.81	2.1
Netherlands	39.17	41.59	34.62	39.16	36.10	8.5
Norway	-	-	-	-	39.88	-
Portugal	40.33	39.41	41.30	39.97	39.69	.7
Romania	-	-	-	-	38.78	-
Spain	34.02	45.36	32.67	34.92	34.13	2.3
Sweden	-	-	-	35.00	39.64	-11.7
Turkey	-	-	-	39.30	39.90	-1.5
United Kingdom	43.09	42.53	36.28	42.78	34.87	22.7
West Germany	40.80	39.22	39.98	35.27	35.68	-1.2
Yugoslavia	-	-	-	-	35.00	-
Other ²	39.92	40.91	-	39.95	42.88	-6.8
Asia Total	39.47	38.54	37.10	38.13	37.18	2.5
China (Taiwan)	40.40	38.32	37.43	37.71	35.94	4.9
Israel	-	-	-	39.02	38.84	.5
Japan	37.26	38.37	36.46	38.12	38.79	-1.7
Korea, Republic of	39.92	39.47	-	39.61	37.88	4.5
Other ²	40.86	37.79	-	38.91	37.27	4.4
Oceania & Australia Total	40.97	40.00	-	36.60	34.98	4.7
Africa Total	29.94	35.93	29.94	31.34	30.90	1.4
Egypt	-	-	-	35.91	-	-
Other ²	29.94	35.93	29.94	31.34	30.90	1.4
Total	36.52	36.06	37.33	36.25	37.26	-2.7
U.S. Total³	36.88	36.41	38.05	36.85	37.64	-2.1

¹Based on the U.S.-Canada Free Trade Agreement, as of January 1990, the U.S. Department of Commerce began reporting statistics on U.S. exports to Canada based on information on imports provided monthly by the Canadian government. For this reason the quantity and value for coal (metallurgical and steam) and the quantity for coke are no longer strictly comparable to the historical U.S. series.

²Includes countries with exports less than or equal to 50,000 short tons in 1989.

³Average price of all steam coal exports.

Note: Total may not equal sum of components because of independent rounding. Average price is based on the free alongside ship (f.a.s.) value. The average prices presented in this table are considered to be representative prices for coal exports and fall within the range of \$28 to \$50 inclusively. Steam coal includes bituminous, subbituminous, lignite, and anthracite.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 8. Metallurgical Coal Exports, November 1990
(Short Tons)

Continent and Country of Destination	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	487,852	311,748	595,636	4,260,122	6,300,824	-32.4
Canada ¹	487,852	311,748	595,636	4,259,907	6,281,948	-32.2
Other ²	-	-	-	215	18,876	-98.9
South America Total	524,494	493,441	782,419	5,725,041	6,012,130	-4.8
Argentina	75,655	-	130,493	577,537	741,252	-22.1
Brazil	448,839	493,441	651,926	5,092,870	5,242,154	-2.8
Chile	-	-	-	54,634	28,724	90.2
Europe Total	3,070,029	2,609,650	3,118,675	34,085,324	31,935,280	6.7
Albania	27,507	34,097	24,813	178,057	119,820	48.6
Belgium & Luxembourg	359,294	483,854	443,438	5,570,336	5,485,325	1.5
Bulgaria	-	-	-	48,890	-	-
Denmark	-	-	-	55,572	128,336	-56.7
Finland	-	-	-	95,259	102,123	-6.7
France	540,766	228,275	580,993	4,631,683	4,477,197	3.5
Ireland	-	-	-	-	169,224	-
Italy	525,508	614,525	182,268	6,475,121	5,918,932	9.4
Netherlands	450,049	262,584	392,687	3,706,013	2,961,319	25.1
Norway	-	19,454	8,578	97,783	83,671	16.9
Portugal	-	-	-	257,646	352,799	-27.0
Romania	69,162	62,755	195,525	1,653,608	1,231,510	34.3
Spain	234,326	248,275	334,105	3,039,102	2,888,780	5.2
Sweden	81,907	259,983	83,111	842,568	529,712	59.1
Turkey	283,725	-	284,711	2,100,649	1,531,127	37.2
United Kingdom	330,519	350,672	479,775	3,830,969	4,018,038	-4.7
West Germany	-	8,569	33,632	599,034	471,763	27.0
Yugoslavia	167,266	36,607	75,039	880,230	1,447,273	-39.2
Other ²	-	-	-	22,804	18,331	24.4
Asia Total	1,550,735	1,055,989	1,427,047	13,419,627	14,816,908	-9.4
China (Taiwan)	-	72,166	172,981	393,536	693,931	-43.3
Israel	-	-	-	54,788	148,817	-63.2
Japan	1,254,598	935,330	925,955	10,234,713	10,908,650	-6.2
Korea, Republic of	296,137	48,493	328,111	2,713,853	3,005,059	-9.7
Pakistan	-	-	-	-	60,451	-
Other ²	-	-	-	22,737	-	-
Africa Total	171,752	-	102,150	1,078,744	1,353,369	-20.3
Algeria	171,752	-	-	479,217	739,818	-35.2
Egypt	-	-	102,150	544,371	585,161	-7.0
Other ²	-	-	-	55,156	28,390	94.3
Total	5,804,862	4,470,828	6,025,927	58,568,858	60,418,511	-3.1

¹Based on the U.S.-Canada Free Trade Agreement, as of January 1990, the U.S. Department of Commerce began reporting statistics on U.S. exports to Canada based on information on imports provided monthly by the Canadian government. For this reason the quantity and value for coal (metallurgical and steam) and the quantity for coke are no longer strictly comparable to the historical U.S. series.

²Includes countries with exports less than or equal to 50,000 short tons in 1989.

Note: Total may not equal sum of components because of independent rounding.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 9. Average Price of Metallurgical Coal Exports, November 1990
(Dollars per Short Ton)

Continent and Country of Destination	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	\$39.97	\$37.28	\$46.92	\$37.89	\$46.13	-17.9
Canada ¹	39.97	37.28	46.92	37.88	46.15	-17.9
Other ²	-	-	-	49.93	36.38	37.3
South America Total	47.36	47.26	45.93	46.76	45.52	2.7
Argentina	45.92	-	44.30	45.59	44.54	2.4
Brazil	47.61	47.26	46.25	46.88	45.64	2.7
Chile	-	-	-	48.84	48.84	*
Europe Total	47.85	47.70	45.56	47.18	45.12	4.5
Albania	-	-	44.91	48.38	43.93	10.1
Belgium & Luxembourg	48.39	46.37	45.89	47.85	44.94	6.5
Bulgaria	-	-	-	49.44	-	-
Denmark	-	-	-	-	34.97	-
Finland	-	-	-	44.72	42.41	5.4
France	47.12	47.92	39.69	45.16	43.49	3.9
Ireland	-	-	-	-	36.20	-
Italy	48.23	48.30	49.09	47.62	46.19	3.1
Netherlands	48.25	47.28	46.98	47.10	44.71	5.3
Portugal	-	-	-	45.79	43.30	5.7
Romania	44.45	-	49.01	47.59	45.82	3.9
Spain	46.41	-	47.64	47.86	46.66	2.6
Sweden	48.15	48.22	47.12	48.61	46.84	3.8
Turkey	47.84	-	43.75	46.16	43.37	6.4
United Kingdom	49.41	48.88	48.03	48.41	46.38	4.4
West Germany	-	37.52	-	44.88	45.78	-2.0
Yugoslavia	46.98	44.32	44.41	46.09	44.29	4.1
Asia Total	45.00	46.89	45.57	45.99	44.30	3.8
China (Taiwan)	-	48.77	45.44	47.48	45.30	4.8
Israel	-	-	-	43.64	39.92	9.3
Japan	44.15	46.69	45.04	45.41	43.78	3.7
Korea, Republic of	48.63	48.07	47.12	48.02	46.18	4.0
Africa Total	48.57	-	45.37	46.67	45.56	2.4
Algeria	48.57	-	-	47.67	46.02	3.6
Egypt	-	-	45.37	45.82	45.59	.5
Other ²	-	-	-	-	33.11	-
Total	46.40	46.65	45.74	46.14	45.08	2.4
U.S. Total³	46.42	47.06	45.81	46.38	45.16	2.7

*Rounded to zero.

¹Based on the U.S.-Canada Free Trade Agreement, as of January 1990, the U.S. Department of Commerce began reporting statistics on U.S. exports to Canada based on information on imports provided monthly by the Canadian government. For this reason the quantity and value for coal (metallurgical and steam) and the quantity for coke are no longer strictly comparable to the historical U.S. series.

²Includes countries with exports less than or equal to 50,000 short tons in 1989.

³Average price of all metallurgical coal exports.

Note: Total may not equal sum of components because of independent rounding. Average price is based on the free alongside ship (f.a.s.) value. The average prices presented in this table are considered to be representative prices for coal exports and fall within the range of \$28 to \$50 inclusively.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 10. Coal Exports by Customs District, November 1990
(Short Tons)

Customs District	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
Eastern Total	5,904,362	5,542,992	5,894,659	60,783,048	56,114,876	8.3
Boston, MA	-	-	-	54,033	-	-
Baltimore, MD	418,461	739,170	1,265,586	7,366,722	8,757,103	-15.9
Portland, ME	-	-	-	782	159	391.8
Buffalo, NY	2,709	241,638	2,134	377,672	43,237	NM
New York City, NY	10,925	751	-	17,229	1,703	NM
Ogdensburg, NY	12,938	567	641	52,315	9,192	469.1
Philadelphia, PA	432,311	313,222	296,643	3,207,096	2,388,536	34.3
Norfolk, VA	5,027,018	4,247,644	4,329,655	49,707,199	44,914,946	10.7
Southern Total	1,920,055	1,360,505	2,023,075	20,490,201	18,895,425	8.4
Mobile, AL	786,036	419,119	876,141	7,161,767	8,017,961	-10.7
Savannah, GA	-	-	-	-	725	-
Miami, FL	335	-	9,009	1,270	10,966	-88.4
Tampa, FL	-	-	-	18,099	-	-
New Orleans, LA	1,004,310	824,804	1,010,417	11,914,854	9,963,594	19.6
Wilmington, NC	-	-	-	-	70,417	-
Charleston, SC	103,408	82,209	83,700	1,058,746	708,344	49.5
Houston-Galveston, TX	21,321	377	43,480	137,413	76,531	79.6
Laredo, TX	4,645	33,996	328	198,052	46,887	322.4
Western Total	294,357	310,970	338,710	2,740,460	2,816,064	-2.7
Anchorage, AK	81,639	84,682	-	722,892	517,136	39.8
Nogales, AZ	-	-	-	2,673	-	-
Los Angeles, CA	155,289	225,841	329,514	1,772,973	2,113,557	-16.1
San Diego, CA	68	114	-	3,298	4,344	-24.1
San Francisco, CA	52,781	160	8,223	152,277	41,595	266.1
Great Falls, MT	-	-	-	131	98	33.7
Portland, OR	-	-	-	3,989	576	NM
Seattle, WA	4,580	173	973	82,227	138,758	-40.7
Northern Total	1,500,930	1,540,417	1,511,995	13,952,799	15,100,059	-7.6
Chicago, IL	-	15,242	-	47,242	-	-
Detroit, MI	239,694	11,389	2,454	3,624,750	41,540	NM
Duluth, MN	84,111	63,450	31,070	473,690	192,303	146.3
Pembina, ND	197	-	181	284	14,916	-98.1
Cleveland, OH	1,176,928	1,450,336	1,478,290	9,710,448	14,851,300	-34.6
Milwaukee, WI	-	-	-	96,385	-	-
Total	9,621,170	8,756,483	9,768,439	97,990,561	92,926,424	5.4

¹Percent change calculation not meaningful as value is greater than 500.
 Note: Total may not equal sum of components because of independent rounding.
 Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 11. Coke Exports, November 1990
(Short Tons)

Continent and Country of Destination	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	125,919	19,009	47,287	463,961	678,734	-31.6
Canada ¹	121,108	10,889	36,247	372,038	537,961	-30.8
Mexico	4,740	8,120	10,889	90,824	139,762	-35.0
Other ²	71	-	151	1,099	1,011	8.7
South America Total	-	-	23,409	56,758	99,422	-42.9
Venezuela	-	-	23,409	44,782	77,110	-41.9
Other ²	-	-	-	11,976	22,312	-46.3
Europe Total	4,708	-	-	44,203	76,828	-42.5
Asia Total	-	-	-	31	95,968	-100.0
Japan	-	-	-	31	71,756	-100.0
Other ²	-	-	-	-	24,212	-
Total	130,627	19,009	70,696	564,953	950,952	-40.6

¹Based on the U.S.-Canada Free Trade Agreement, as of January 1990, the U.S. Department of Commerce began reporting statistics on U.S. exports to Canada based on information on imports provided monthly by the Canadian government. For this reason the quantity and value for coal (metallurgical and steam) and the quantity for coke are no longer strictly comparable to the historical U.S. series.

²Includes countries with exports less than or equal to 50,000 short tons in 1989.

Note: Total may not equal sum of components because of independent rounding.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report EM 522."

Table 12. Coal Imports, November 1990
(Short Tons)

Continent and Country of Origin	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	76,089	103,197	96,296	883,856	979,617	-9.8
Canada	76,089	103,197	93,308	877,652	925,235	-5.1
Mexico	-	-	2,988	6,204	54,382	-88.6
South America Total	148,315	180,991	148,556	1,518,717	1,509,193	.6
Argentina	-	-	265	-	265	-
Colombia	148,315	131,377	74,104	1,284,734	1,179,140	9.0
Venezuela	-	49,614	74,187	233,983	329,788	-29.1
Europe Total	-	-	10	5,391	11,539	-53.3
Denmark	-	-	-	130	-	-
France	-	-	10	-	10	-
Netherlands	-	-	-	-	11,198	-
Norway	-	-	-	46	-	-
United Kingdom	-	-	-	5,215	-	-
West Germany	-	-	-	-	331	-
Asia Total	-	2	-	2	47,786	-100.0
China (Peking)	-	-	-	-	47,694	-
Hong Kong	-	-	-	-	41	-
Japan	-	2	-	2	-	-
Korea, Republic of	-	-	-	-	51	-
Oceania & Australia Total	-	-	-	23,794	-	-
Australia	-	-	-	23,794	-	-
Total	224,404	284,190	244,862	2,431,760	2,548,135	-4.6

Note: Total may not equal sum of components because of independent rounding.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report IM 145."

Table 13. Average Price of Coal Imports, November 1990
(Dollars per Short Ton)

Continent and Country of Origin	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	\$23.87	\$26.51	\$23.97	\$24.66	\$26.23	-6.0
Canada	23.87	26.51	23.48	24.55	25.91	-5.2
Mexico	-	-	38.48	38.36	31.05	23.5
South America Total	36.14	37.08	35.06	37.59	34.90	7.7
Colombia	36.14	35.87	37.65	37.01	35.40	4.6
Venezuela	-	40.27	32.47	40.76	33.11	23.1
Europe Total	-	-	-	37.17	44.34	-16.2
Denmark	-	-	-	36.35	-	-
Netherlands	-	-	-	-	44.34	-
United Kingdom	-	-	-	37.19	-	-
Oceania & Australia Total	-	-	-	41.73	-	-
Australia	-	-	-	41.73	-	-
Total	32.14	33.47	30.83	33.51	31.78	5.4
U.S. Total¹	32.86	41.32	31.54	34.57	34.03	1.6

¹Average price of all coal imports.

Note: Total may not equal sum of components because of independent rounding. Average price is based on the free alongside ship (f.a.s.) value. The average prices presented in this table are considered to be representative prices for coal imports and fall within the range of \$20 to \$50 inclusively.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report IM 145."

Table 14. Coal Imports by Customs District, November 1990
(Short Tons)

Customs District	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
Eastern Total	72,670	-	27,754	322,490	427,429	-24.6
Boston, MA	39,918	-	27,669	139,771	27,669	405.2
Baltimore, MD	-	-	10	-	258,615	-
Portland, ME	-	-	33	115,011	33	NM
Buffalo, NY	-	-	-	69	26,849	-99.7
New York City, NY	-	-	-	-	41	-
Ogdensburg, NY	-	-	42	45	200	-77.5
Philadelphia, PA	32,752	-	-	67,594	114,022	-40.7
Southern Total	75,645	180,991	122,375	1,241,561	1,208,072	2.8
Mobile, AL	-	-	34,004	-	34,004	-
Tampa, FL	41,253	131,377	86,618	914,941	781,958	17.0
New Orleans, LA	-	-	-	-	28,660	-
Wilmington, NC	-	-	-	46	-	-
San Juan, PR	34,392	24,525	-	234,989	294,677	-20.3
Houston-Galveston, TX	-	-	265	5,215	15,910	-67.2
Laredo, TX	-	-	1,488	6,204	52,863	-88.3
Virgin Islands	-	25,089	-	80,166	-	-
Western Total	2,206	2,846	5,527	94,086	130,049	-27.7
Los Angeles, CA	-	2	-	2	-	-
San Diego, CA	-	-	-	-	19	-
San Francisco, CA	-	-	-	-	47,745	-
Honolulu, HI	-	-	-	23,794	-	-
Great Falls, MT	2,206	2,844	5,527	39,623	74,519	-46.8
Seattle, WA	-	-	-	30,667	7,766	294.9
Northern Total	73,883	100,353	89,206	773,623	782,585	-1.1
Chicago, IL	29,490	49,244	68,869	286,709	453,691	-36.8
Duluth, MN	-	-	-	-	431	-
Pembina, ND	44,393	51,109	20,337	486,914	311,849	56.1
Cleveland, OH	-	-	-	-	16,614	-
Total	224,404	284,190	244,862	2,431,760	2,548,135	-4.6

^{NM}Percent change calculation not meaningful as value is greater than 500.

Note: Total may not equal sum of components because of independent rounding.

Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report IM 145."

Table 15. Coke Imports, November 1990
(Short Tons)

Continent and Country of Origin	November 1990	October 1990	November 1989	Year to Date		Percent Change
				1990	1989	
North America Total	1,272	41,672	10,013	165,367	219,875	-24.8
Canada	1,272	41,672	3,743	143,580	205,177	-30.0
Mexico	-	-	6,270	21,787	14,698	48.2
Europe Total	-	-	15,183	39,572	818,444	-95.2
Belgium & Luxembourg	-	-	-	-	98,283	-
France	-	-	-	-	36,872	-
Germany	-	-	-	39,572	-	-
Netherlands	-	-	-	-	17,244	-
Sweden	-	-	15,183	-	118,656	-
United Kingdom	-	-	-	-	56,201	-
West Germany	-	-	-	-	443,341	-
Yugoslavia	-	-	-	-	47,847	-
Total	47,232	-	-	296,935	754,688	-60.7
China (Peking)	-	-	-	-	67,054	-
Japan	47,232	-	-	296,935	687,634	-56.8
Asia & Australia Total	40,084	-	-	222,092	463,851	-52.1
Australia	40,084	-	-	222,092	463,851	-52.1
Total	88,588	41,672	25,196	723,966	2,256,858	-67.9

Note: Total may not equal sum of components because of independent rounding.
Source: Bureau of the Census, U.S. Department of Commerce, "Monthly Report IM 145."

State Coal Profile: North Dakota

Total Area of State:

70,665 square miles

Area Underlain by Coal:

32,000 square miles

Demonstrated Reserve Base of Coal: (January 1, 1990)

10 billion short tons
(2 percent of U.S. total)

First Year of Documented Coal Production:

1884 (35,000 short tons)

Peak Year of Coal Production:

1988 (30 million short tons)

1989 Coal Production:

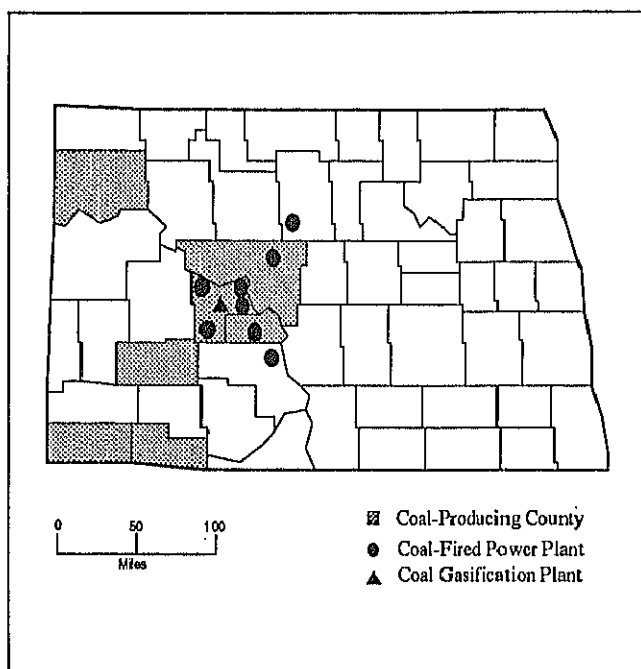
30 million short tons
(3 percent of U.S. total)

1989 f.o.b. Mine Price:

\$7.36 per short ton
(U.S. average = \$21.82)

1989 Coal Consumption:

27 million short tons
(3 percent of U.S. total)



	<u>Number</u>	<u>Percentage of U.S. Total</u>
Number of Mines (1989)	13	<1
Underground	0	--
Surface	13	<1
Number of Miners (1989) (at mines producing more than 10,000 short tons)	850	<1
Underground	0	--
Surface	850	<1
Average Quality of Utility Coal Receipts (1989)	<u>North Dakota</u>	<u>U.S. Average</u>
Heat Content (million Btu per short ton)	13.2	20.9
Sulfur Content (percent by weight)	0.7	1.3
Ash Content (percent by weight)	9.2	9.9

Lignite is the only rank of coal present in North Dakota. The value of the 30 million short tons produced in 1989 was over \$200 million. This was about one-fourth of the total value of all mineral commodities produced in the State and ranked second to crude oil, the leading mineral commodity. Royalties from 5 million short tons of lignite produced from Federal leases in 1989 totaled \$3.6 million, half of which was paid to the State. In Fiscal Year 1989, the State also received about \$23 million from coal severance taxes and \$12 million from coal conversion taxes levied on large coal users.

Lignite deposits underlie most of the western half of North Dakota. They occur in the Williston Basin, a large depression that also extends into the adjacent States and Canada. The lignite has a relatively low heat content, averaging about 13 million Btu per short ton, as mined. The moisture content is high, typically 35 to 40 percent by weight. Generally, the sulfur content is less than 1 percent, by weight, and the ash content is less than 10 percent. Because lignite degrades in quality, or "slackens," when exposed to the atmosphere, it is usually consumed near the mine. About seven lignite beds are currently mined in North Dakota, the most important of which is the Beulah-Zapp. This bed, which averages 14 feet in thickness, is the source for nearly 90 percent of the State's coal output and is one of the major coalbeds in the United States.

The first recorded use of lignite in what is now North Dakota was in 1804, when the Lewis and Clark expedition burned it in a blacksmith forge. The presence of lignite, which could be used as fuel in the generally treeless plains of North Dakota, was one of the promotional points made by land developers, territorial officials, and railroad companies to attract settlers to the area. Commercial mining began in Morton County in the early 1870's. Later, many small communities developed as coal-mining towns. Production was stimulated in 1896 when the State institutions were required by law to obtain as much of their fuel supply as possible from North Dakota's mines.

Annual lignite production was less than 100,000 short tons until 1900. It exceeded 1 million short tons in 1922, rose above 2 million short tons in the late 1930's, and generally remained at that level into the early 1960's. That long period of stagnation was due largely to competition from oil and gas (some produced in the State from the Williston Basin), and to the development of hydroelectric power from the Missouri River.

Production turned upward in the late 1960's and continued to rise as mining expanded chiefly to supply lignite for new electric generating plants built in the State. Output climbed from about 6 million

short tons in 1970 to 17 million short tons in 1980 and was about 30 million short tons in 1988 and 1989, ranking North Dakota 11th among the coal-producing States both years. Compared with other lignite-producing States, North Dakota was the leader from about 1920 through 1974, when Texas gained first place.

Most of the early lignite production was from underground mines. Exposed beds were usually first surface-mined with horse-drawn scrapers and hand implements, and then the bed was followed underground. Surface mining with a steam shovel began in 1919. As technology advanced, North Dakota became one of the first States to use surface mining on a large scale. Surface mines accounted for more than half of the State's coal output by the mid 1930's and for all production since 1966. Of the 13 surface mines in operation in 1989, two were among the largest U.S. coal mines. The Freedom mine, operated by the Coteau Properties Company in Mercer County, was the largest in the State and the 10th-largest in the Nation, with an output of over 11 million short tons. The Falkirk mine of the Falkirk Mining Company in McLean County ranked second in the State, and 19th nationally, with over 7 million short tons of production. Coal miner productivity for all coal mines in North Dakota in 1989 averaged 15.7 short tons per hour, the Nation's third-highest after Wyoming and Montana.

Almost all of the lignite produced in North Dakota is consumed in the State. Of the 30 million short tons produced in 1989, nearly 28 million short tons remained in North Dakota and 2 million short tons were delivered to a power plant in South Dakota, with a small amount shipped to a power plant in Minnesota.

In 1989, coal consumption in North Dakota was about 27 million short tons, which ranked 8th nationally. Virtually all of the coal consumed was lignite; less than 1 percent was subbituminous coal from Montana. Electric power plants were the principal consumers of lignite, accounting for about 21 million short tons. Consumption in the industrial sector was dominated by the Great Plains Synfuel Plant, which used about 6 million short tons. Considerably smaller amounts of lignite and subbituminous coal were used in refining sugar. Small quantities of lignite have been made into cooking briquettes. Oxidized lignite, or Leonardite, has been used as a thinner for oil well drilling mud, an industrial water softener, and a soil conditioner.

The Great Plains Synfuel Plant, located near Beulah, has the distinction of being the only commercial-scale coal gasification plant in the United States that manufactures a high-Btu synthetic natural gas (SNG). The concept for the \$2.1 billion plant originated during the 1973 Arab oil embargo. In 1981, a

consortium of five energy companies began plant construction, financed largely with Federally guaranteed loans. Commercial operations began in 1984, converting an average of 16,000 short tons of lignite per day from the nearby Freedom mine into 142 million cubic feet of pipeline-quality gas. Although a technological success, the plant encountered economic difficulties because of falling energy prices. In 1985, the consortium abandoned the project after failing to secure additional Federal assistance. Ownership reverted to the U.S. Department of Energy (DOE), which subsequently sold the plant to Dakota Gasification Company in 1988. Current byproducts from the plant are anhydrous ammonia, sulfur, and liquid nitrogen. Additional byproducts scheduled to be produced in 1991 are krypton, xenon, and phenol.

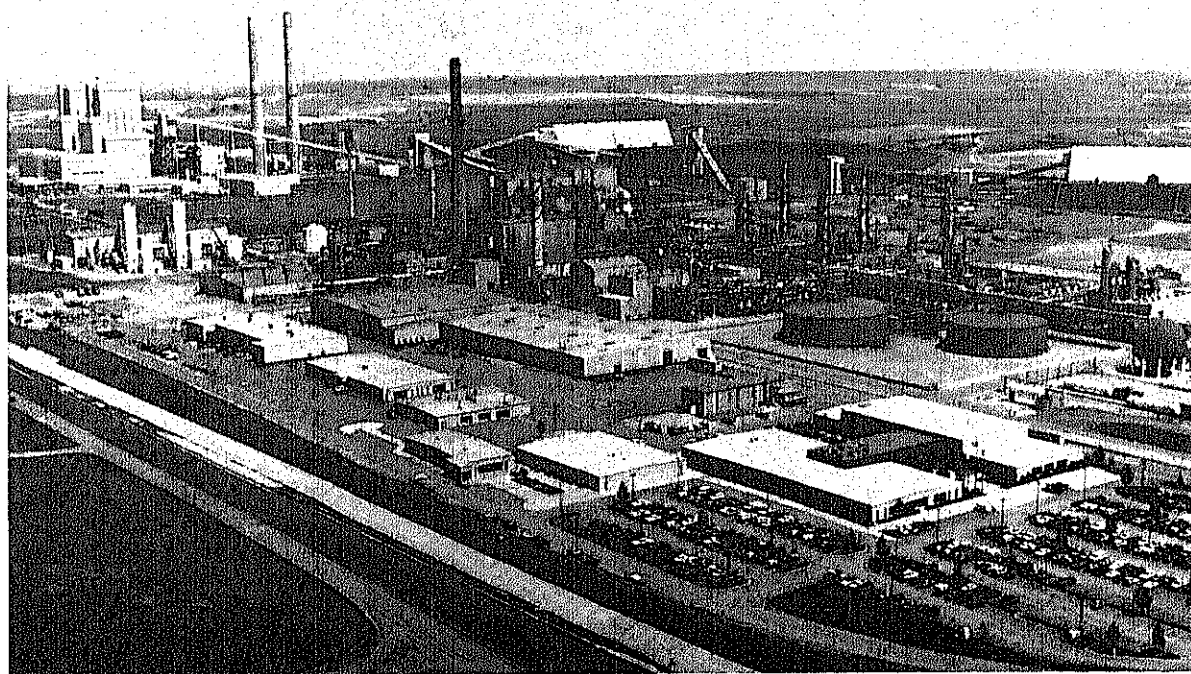
The eight lignite-fired power plants in North Dakota have a total net summer capability of 3,876 megawatts (MW), or 86 percent of the State's total. In 1989, the lignite-fired plants generated 23,774 gigawatthours, accounting for more than 90 percent of the total electricity generated in the State.

With no new projects using lignite scheduled, annual lignite production in North Dakota is expected to remain at about 30 million short tons in the early 1990's. Production increases will depend on the marketing of the surplus electric generating capability of the State's lignite-fueled power plants

and the expansion of the markets for byproducts from the synfuel plant. Research and development underway on coal-drying technology offers the potential of economically shipping lignite longer distances. Underground gasification is one of several technologies also being studied as a way of expanding the use of North Dakota's lignite deposits.

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North Dakota's Great Plains Synfuel Plant, near Beulah, manufactures synthetic natural gas from lignite produced at the Freedom mine, shown in the background.

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